

**[0028]** FIG. 1 a diagrammatic and perspective depiction of an exemplary embodiment of a motor vehicle according to the invention with partially extended solar cell arrangement,

**[0029]** FIG. 2 a diagrammatic and perspective depiction of the motor vehicle shown in FIG. 1 with fully extended solar cell arrangement, and

**[0030]** FIG. 3 a diagrammatic depiction of a further exemplary embodiment of a motor vehicle according to the invention with fully extended solar cell arrangement.

**[0031]** In the different figures, the same parts always carry the same reference signs so these are usually only described once.

**[0032]** FIG. 1 shows a diagrammatic and perspective depiction of an exemplary embodiment of an electrically drivable motor vehicle 1 according to the invention with partially extended solar cell arrangement 2. The motor vehicle 1 also has at least one electric drive device (not shown).

**[0033]** The solar cell arrangement 2 has a flexible structure 3, several inflatable hose-like chambers 4 arranged or formed on the flexible structure 3, several solar cell units arranged on the flexible structure 3 and shown in FIG. 2, and a transfer device (not shown) connected to the chambers 4, for transferring the flexible structure 3 from a slack storage state into a tensioned function state shown in FIG. 2.

**[0034]** At least one element (not shown) made of a shape-memory polymer is arranged on the flexible structure 2, and/or the flexible structure 3 is formed at least partially from a shape-memory polymer, and/or a wall (not shown) of the respective chamber 4 is made at least partially from a shape-memory polymer. The flexible structure 3 is arranged and configured such that, in the tensioned function state shown in FIG. 2, it forms a hood covering the motor vehicle 1 completely from the top and at the side.

**[0035]** In a roof region, the motor vehicle 1 has a storage space 5 for storing the flexible structure 3 in its slack storage state, and a retraction device (not shown) for retracting the flexible structure 3 in its slack storage state into the storage space 5.

**[0036]** The motor vehicle 1 also has a vehicle electronics (not shown) connected to the transfer device and the retraction device, which is configured to actuate the transfer device during a parked condition of the motor vehicle 1 in order to automatically transfer the flexible structure 3, fully present in the storage space 5, from the slack storage state into the tensioned function state, and thereby move the flexible structure 3 out of the storage space 5, and to actuate the retraction device after receiving a signal indicating an impending end of the parked condition, in order to automatically retract the flexible structure 3, again in its slack storage state, completely back into the storage space 5.

**[0037]** FIG. 2 shows a diagrammatic and perspective view of the motor vehicle 1 shown in FIG. 1 with fully extended solar cell arrangement 2. The solar cell arrangement 2 forms the hood described above. The shape-memory polymer also serves to completely expand the flexible structure 3 with solar cell units 6 arranged thereon.

**[0038]** FIG. 3 shows a diagrammatic depiction of a further exemplary embodiment of a motor vehicle 7 according to the invention with fully extended solar cell arrangement 8. A view of the passenger compartment of the motor vehicle 1 is shown. In particular, the dashboard 9 of the motor

vehicle 7 is shown, over which the windscreen is arranged which is covered by the solar cell arrangement 8 and therefore not visible.

**[0039]** In contrast to the exemplary embodiment shown in FIGS. 1 and 2, with the solar cell arrangement 8 according to FIG. 3, the flexible structure 10 is arranged and configured such that, in the tensioned function state shown in FIG. 3, it forms a large-area screen on an inside of the vehicle window (not shown) facing the passenger compartment of the motor vehicle 1.

**[0040]** The solar cell unit of the solar cell arrangement 8 is arranged on the side of the flexible structure 10 facing away from the viewer in FIG. 3, and is not therefore visible. The motor vehicle 7 may have a storage space (not shown) above or below the vehicle window for storage of the flexible structure 10 in its slack storage state.

**[0041]** Otherwise, the motor vehicle 7 may be formed according to the exemplary embodiment shown in FIGS. 1 and 2. To avoid repetition, reference is made to the above description in relation to FIGS. 1 and 2.

#### LIST OF REFERENCE SIGNS

- [0042]** 1 Motor vehicle
- [0043]** 2 Solar cell arrangement
- [0044]** 3 Flexible structure
- [0045]** 4 Inflatable chamber
- [0046]** 5 Storage space
- [0047]** 6 Solar cell unit
- [0048]** 7 Motor vehicle
- [0049]** 8 Solar cell arrangement
- [0050]** 9 Dashboard
- [0051]** 10 Flexible structure

1. A solar cell arrangement (2, 8) for an electrically drivable motor vehicle (1, 7), the solar cell arrangement comprising:

- at least one flexible structure (3, 10),
- at least one inflatable chamber (4) which is arranged or formed on the at least one flexible structure (3, 10),
- at least one solar cell unit (6) arranged on the at least one flexible structure (3, 10), and
- at least one transfer device connected to the at least one inflatable chamber (4) for transferring the at least one flexible structure (3, 10) from a slack storage state into a tensioned function state,

wherein at least one element of a shape-memory polymer is arranged on the at least one flexible structure (3, 10), the at least one flexible structure (3, 10) is formed at least partially from the shape-memory polymer, and/or a wall of the at least one inflatable chamber (4) is formed at least partially from the shape-memory polymer.

2. A motor vehicle (1, 7), comprising:

- at least one electric drive device, and
- a solar cell arrangement (2, 8), the solar cell arrangement comprising:
  - at least one flexible structure (3, 10),
  - at least one inflatable chamber (4) which is arranged or formed on the at least one flexible structure (3, 10),
  - at least one solar cell unit (6) arranged on the at least one flexible structure (3, 10), and
  - at least one transfer device connected to the at least one inflatable chamber (4) for transferring the at least one flexible structure (3, 10) from a slack storage state into a tensioned function state,